

CHAPTER 1

GENERAL CONSIDERATIONS

1-1. Purpose. This manual provides guidance compiled from experience and research for use in the planning and design of recreation areas, sites, and facilities. The material in this manual is intended to produce safe, efficient, cost effective recreation facilities that are accessible and enjoyable to all.

1-2. Scope. This manual presents basic design considerations for major components of recreation areas and contains specific guidelines which can eliminate confusion and duplication of effort. Additional guidance is given in the form of construction details and examples of existing design concepts. The examples were selected for their soundness of design and their capability for meeting the public need for recreation facilities.

1-3. Applicability. This manual is applicable to all field operating activities responsible for the evaluation, design, construction, renovation, rehabilitation, management, and administration of all new and/or existing recreation developments on Government lands.

1-4. General. The design must address concerns for functional use, creative design, environmental harmony, and economical construction and operation. The design must provide for the health, safety, security, and comfort of the visitor in all aspects of development.

a. Visitor Needs. Recreation development should consider current public needs and the scope of activities, facilities, and management duties required to fill those needs. Each site selected for a specific use should support the present requirements and be evaluated for potential future expansion. The designer must research all available information such as the Master Plan, Natural Resources Management System data, State Comprehensive Outdoor Recreation Plans, and current and anticipated visitation.

b. Area Selection. Areas chosen for development should be in accordance with the current Master Plan and must support the proposed use. Activities should be compatible with surrounding land uses to minimize conflicts and avoid overuse of the resources.

c. Cost Effectiveness. Care must be taken to avoid overdesign and underdesign in both size and number of facilities. Economy of scale and life cycle cost analysis using cost effective materials must be considered. Facilities should be consistent with anticipated visitation and the carrying capacity of the site. Cost effective off-the-shelf items should be incorporated where compatible with resource use objectives established in the Master Plan.

d. **Interdisciplinary Team Approach.** The design of all facilities shall be a fully coordinated team effort among the planning, design, construction, operation, and non-Federal elements. This interaction shall begin with initial planning concepts and continue throughout the construction and operational phases of the project. Items such as roads, parking areas, launching ramps, campsites, beach developments, and similar facilities should be field staked, evaluated, and field adjusted by the design team during the developmental phase. The design team shall periodically visit the sites/areas during construction to determine whether field conditions are as anticipated and to consult with construction personnel in interpreting the plans and specifications. These site visits will also be used to observe and correct any problems not apparent or fully evaluated in the design. The team approach should be used for all aspects of Federal projects as well as for the review and approval of plans to be developed by non-Federal entities. The evaluation process is not finished when construction is complete. The team should observe facilities during project operations to correct inconsistencies between design and usage and gain experience for future design.

1-5. **Design Flexibility.** The various recreation opportunities created by the national diversity in types of projects, resource base, user profiles, recreation season require flexibility.

a. **Site Selection and Layout.** Selected sites should be conducive to development and enjoyment of outdoor recreation. Such sites may include: open meadows and woodlands adjacent to streams and other water bodies, level and rolling terrain, and natural features such as waterfalls, rock outcroppings, and specimen trees. It is desirable for the site to relate closely to areas designated for forest and wildlife conservation for the mutual protection provided.

b. **Consolidation of Facilities.** Economy of scale must be considered in the development of an area. It is generally more cost effective to develop, operate, and maintain a large comprehensive site than several small single use areas. Common sense must be exercised to provide the desired recreation experience and establish proper density of facilities.

c. **Design for Efficient Operation.** Areas should be developed for single uses with their controlled entrances. However, in the event of consolidation of multiple use areas, a single controlled entrance to the consolidated area is the most efficient.

1-6. **Design For Lease Outgrant Potential.** Area and facility design and renovation should consider the potential for non-Federal participation in the development and subsequent operation and maintenance. The design team should develop positive working relationships with existing as well as potential local sponsors. Initial costs and O&M capabilities of the local sponsor must be considered when establishing the scope of the development.

1-7. Standardization. It is impractical to create absolute standards for all types of recreation facilities. Regional and environmental needs and user profiles must be analyzed. Facilities design must take into account common local building materials, availability, building practices, regional architectural themes, compatibility with adjacent development, State and local building codes, and maintenance practices. Designs will be developed along regional environmental boundaries and should be reviewed periodically to ensure flexibility and continued applicability. Off-the-shelf structures and standardized components must be considered.

1-8. Future Development In Existing Areas. Development may be permitted in existing areas under certain circumstances. Where modification or renovation of existing facilities is required, special design attention shall be given to:

- Improve health, safety, and security features for the visitor
- Resource carrying capacity
- Maintain environmental quality
- Reduce O&M costs
- Enhance revenue collection potential
- Attract potential non-Federal sponsors

In existing areas capital costs already invested should not be considered as the primary governing factor for determining the types of future use of an area. Changes may be made where necessary and justified.

1-9. Barrier Free Facility Design. All design shall provide for equal access to and utilization of facilities by all visitors. Standards for the design of handicapped accessible facilities are presented in Uniform Federal Accessibility Standards (49 FR 31528). The standards are to be applied during the design, construction, and alteration of buildings and facilities. There are, however, certain situations where these provisions need not be provided. They are:

a. Certain overlooks such as observation towers or decks that are only accessible by steep trails or a series of stairways.

b. All comfort stations within a common recreational site need not be accessible. If site conditions exist that would make it cost prohibitive, provide at least one accessible station in the most convenient location within the area.

c. All boat ramps and courtesy docks need not be accessible if prohibitive by site conditions. If multiple ramps and docks are to be provided within a recreational area, at least one should be accessible.

d. Not all camp sites within a campground need be accessible, provided an appropriate number of assessible sites are included.

e. All primitive camping areas need not be accessible.

f. All hiking, walking, and nature trails need not be accessible.

1-10. Environmental Protection and Enhancement. Designs should minimize the impact of development on the natural environmental qualities of the site. A meeting with representatives from environmental agencies in the early stages of planning is encouraged. This will preclude difficulties in obtaining certain permits prior to the construction phase. The design team should closely monitor the construction and operational activities to ensure compliance with prescribed environmental protection requirements.

1-11. Carrying Capacity. A quality recreation area is dependent on design and construction that is fully compatible with the physical attributes, resource, and social carrying capacity of the site. Under no circumstances should facilities be forced on the resource to meet a prescribed number of facilities. The carrying capacity of the resource should be determined in accordance with guidelines contained in U.S. Army Engineer Waterways Experiment Station (WES) Instruction Report R-80-1.

1-12. Access and Circulation. Access and circulation roads into recreation areas play a major role in influencing the recreation experience. The design and location of roads, parking areas, boat ramps, walks, steps, and trails must be in accordance with the philosophy and intent of how the public will use and participate in the recreation activities. Criteria, data, and basic design considerations for access and circulation in recreation areas is the subject of EM 1110-2-410 and must be used in conjunction with this manual.

1-13. Information Transfers. The importance of information transfer cannot be overemphasized. It is critical to the success of recreation programs that the people involved in the planning, design, and operation of facilities exchange ideas, information, and technology. This information can be from field visits, conferences, and publications.